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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,127	04/29/2002	Kari Pajukoski	4925-176PUS	5550
7590	02/03/2006		EXAMINER	
Michael C Stuart Cohen Pontani Lieberman & Pavane 551 Fifth Avenue Suite 1210 New York, NY 10176			AHN, SAM K	
			ART UNIT	PAPER NUMBER
			2637	
DATE MAILED: 02/03/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/009,127	Applicant(s) PAJUKOSKI ET AL.	
	Examiner Sam K. Ahn	Art Unit 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-41, 43, 44, 46-50 and 52-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-12, 14-20, 37-41, 43, 44, 46-50 and 52-55 is/are allowed.
- 6) ☒ Claim(s) 4, 21 and 32 is/are rejected.
- 7) ☒ Claim(s) 1-3, 5-9, 22-31 and 33-36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see p13, filed 10/31/05, with respect to the rejection(s) of claim(s) 4 under 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Applicants' Admitted Prior Art (AAPA).

### ***Claim Objections***

2. Claims 1-3,5,9,21-25,27,30-33 and 48 are objected to because of the following informalities:

In claim 1, line 9, "signal;" should be "signal; wherein said variance estimate is calculated by:".

In claim 5, line 1, "the method" should be "The method".

Claims 21 and 32 are duplicates.

In claim 48, line 3, end the claim with a period.

Claims 2,3,9,22-25,27,30,31 and 33 directly or indirectly depend on claim 1 or 5.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4,21 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ling et al., USP 6,377,607 B1 (Ling) in view of Narvinger et al, USP 6,381,229 B1 (Narvinger) and in further view of Applicants' Admitted Prior Art (AAPA).

Regarding claim 4, Ling teaches a method for performing an interference estimation in a spread spectrum system comprising:  
receiving a spread spectrum signal (42,44 in Fig.2 ); generating (50,52,54,56,58, 60,62,64 and 66 in Fig.2 and 212,214 in Fig.9) a despread sample signal by averaging over a predetermined code period over which codes are orthogonal (PN codes); and calculating (216 in Fig.9) a variance estimate based on said despread sample signal (note col.16, line 53 - col.17, line 12). However, Ling does not explicitly teach the spread spectrum system using a plurality of spreading codes with different code lengths.

Narvinger teaches a spread spectrum system implementation of different spreading factors to support variable transmission rates (note col.9, lines 19-27). Therefore, it would have been obvious to one skilled in the art at the time of the invention to transmit signals in the spread spectrum system of Ling implementing different spreading factor for the purpose of supporting a desired or required transmission rates, as taught by Narvinger. Thus, by implementing as such, the system would average over a predetermined code period (note col.8, lines 14-15).

However, Ling in view of Narvinger do not explicitly teach wherein said variance estimate is a minimum variance unbiased (MVU) calculated by in accordance with a relationship:  $\delta^2 = E(|X|^2) - |E(X)|^2$ .

AAPA teaches this limitation and cites "fundamentals of statistical signal processing: estimation theory, Prentice Hall, 1993 by S.Kay" (note p.12, lines 19-24 of the specification), wherein AAPA admits to be a prior art. Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of AAPA in the system of Ling in view of Narvinger by estimating the noise or interference using the MVU for the purpose of properly estimating the noise or interference even when the probability density function is not known, the signal average providing the best linear unbiased estimate, as taught by Zvonar (note col.2, line 19-25).

Regarding claims 21 and 32, Narvinger further teaches wherein said spread spectrum system is a WCDMA system (note col.1, line 30).

***Allowable Subject Matter***

4. Claims 10-12,14-20,37-41,43,44,46-50 and 52-55 are allowed.
5. Claims 1-3,9,22,23,30 and 31 would be allowable if rewritten or amended to overcome the claim objections set forth in this Office action.
6. Claims 5-8,24-29 and 33-36 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims, and overcome the claim objections.

7. The following is a statement of reasons for the indication of allowable subject matter:

Present application discloses a method and an apparatus of an interference estimation in a spread spectrum system comprising receiving means, sampling means and estimation means wherein sampling means averages despread sample signal and wherein estimation means compute variance estimation. Prior arts, Ling and Navinger teach all subject matter claimed. However, prior art do not teach the configuration of the estimation means comprising a first integration means, second integration means and subtracting means as recited and illustrated in Fig.3.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zvonar, US 6,717,995 cites the same reference taught by S.Kay admitted by AAPA to be prior art regarding calculation of MVU.

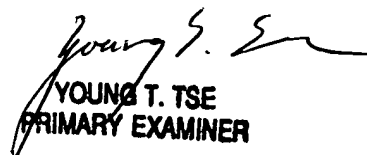
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2637

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam K. Ahn  
1/31/06

  
YOUNG T. TSE  
PRIMARY EXAMINER